

Patent
SFTGB Docket No.: 19308.0028U1
03SKY0029

AMENDMENTS

This listing of claims replaces all prior versions and listings of claims in the application.

1 1. (Currently amended) A method for filtering a receive signal in a
2 wireless receiver, comprising:
3 providing a received signal to an amplifier; and
4 filtering the received signal such that noise contributed by the filter is
5 blocked from an output of the amplifier at a first frequency, wherein filtering at the
6 first frequency is performed by applying a single voltage-to-current conversion and a
7 single current-to-voltage conversion.

1 2. (Original) The method of claim 1, wherein noise contributed by
2 the filter is passed to the output of the amplifier only at a frequency other than the
3 first frequency.

1 3. (Currently amended) The method of claim 1, wherein the filter is
2 comprises a frequency dependent negative resistance implemented using a general
3 impedance converter.

1 4. (Original) The method of claim 3, wherein noise generated by the
2 general impedance converter is blocked from the output of the amplifier at the first
3 frequency.

1 5. (Original) The method of claim 4, wherein the first frequency is
2 the in-band receive frequency.

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1 6. (Currently amended) A low-noise filter for a wireless receiver,
2 comprising:
3 an amplifier; and
4 a filter comprising a single frequency dependent negative resistance
5 implemented using a general impedance converter to realize a bi-quad filter, wherein
6 the amplifier and the frequency dependent negative resistance perform a voltage-to-
7 current conversion and a current-to-voltage conversion, respectively at a first
8 frequency.

1 7. (Currently amended) The low-noise filter of claim 6, wherein the
2 general impedance converter further comprises:
3 a pair of operational amplifiers arranged such that a non-inverting input of a
4 first amplifier is coupled to an inverting input of a second operational amplifier; and
5 at least one capacitance configured to prevent noise generated by the pair of
6 operational amplifiers from appearing at an output of the amplifier at a the first
7 frequency.

1 8. (Original) The low-noise filter of claim 7, wherein the first
2 frequency is the in-band receive frequency.

1 9. (Original) The low-noise filter of claim 8, wherein noise
2 generated by the pair of operational amplifiers appears at the output of the amplifier
3 at a second frequency.

1 10. (Original) The low-noise filter of claim 9, wherein the second
2 frequency is an out-of-band receive frequency.

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1 11. (Currently amended) A portable transceiver, comprising:
2 a modulator configured to receive and modulate a data signal;
3 an upconverter configured to receive the modulated data signal and provide a
4 radio frequency (RF) signal;
5 a transmitter configured to transmit the RF signal; and
6 a direct conversion receiver including an amplifier and a filter, the filter
7 comprising a single frequency dependent negative resistance implemented using a
8 general impedance converter to realize a bi-quad filter, wherein the amplifier and the
9 frequency dependent negative resistance perform a single voltage-to-current
10 conversion and a single current-to-voltage conversion.

1 12. (Currently amended) The portable transceiver of claim 11,
2 wherein the general impedance converter further comprises:
3 a pair of operational amplifiers arranged such that a non-inverting input of a
4 first amplifier is coupled to an inverting input of a second operational amplifier; and
5 at least one capacitance configured to prevent noise generated by the pair of
6 operational amplifiers from appearing at an output of the amplifier stage at a first
7 frequency.

1 13. (Original) The portable transceiver of claim 12, wherein the first
2 frequency is the in-band receive frequency.

1 14. (Original) The portable transceiver of claim 13, wherein noise
2 generated by the pair of operational amplifiers appears at the output of the amplifier
3 stage at a second frequency.

1 15. (Original) The portable transceiver of claim 14, wherein the
2 second frequency is an out-of-band receive frequency.

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1 16. (Currently amended) A portable transceiver, comprising:
2 means for modulating a data signal;
3 means for upconverting the modulated data signal and provide a radio
4 frequency (RF) signal;
5 means for transmitting the RF signal;
6 means for converting a received signal to a baseband signal; and
7 means for filtering the baseband signal so that noise generated by the filter
8 means is prevented from appearing on the received signal at a first frequency,
9 wherein the means for filtering performs a single voltage-to-current conversion and a
10 single current-to-voltage conversion.

1 17. (Original) The portable transceiver of claim 16, wherein the first
2 frequency is the in-band receive frequency.

1 18. (Currently amended) The portable transceiver of claim 17,
2 wherein noise generated by the filter means appears on the received signal at a
3 second frequency.

1 19. (Original) The portable transceiver of claim 18, wherein the
2 second frequency is the out-of-band receive frequency.